Bigger sibs, fighting and space considerations: the influences on parents' seating position choices for their children

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Abstract

Despite the fact that safety organisations recommend that children travel in the rear seat, many children under 12 years in Australia occupy the front seats of cars when they travel. While there has been some research investigating situational factors that influence where children sit, little has been reported on the psychosocial influences on parents' decisions about children's seating positions. This paper reports the results of an intercept interview conducted with parent-drivers (n = 468) of children to explore these factors. In addition, parents' views on the appropriate age for children to use adult seat belts were sought. It appears that most parents were aware that the front seat is more risky yet more than half reported that they had allowed a child under 12 to occupy the front car seat at some time. Several factors influencing this decision were identified. The strongest of these was a pragmatic one: insufficient room in the rear seat. Parents also indicated that children fighting influenced them to allow a child into the front seat and that already having older children permitted to sit there influenced decisions for younger children. These findings suggest that behavioural interventions may be effective in changing parents' seating position choices. Interventions could focus on parental risk perception as well as capitalising on the existing rules parents use to prevent children from sitting in the front seat. Strategies to help parents manage children's behaviour in the car could also prove useful. Lastly, well designed legislation could be used to encourage both child-specific restraints and rear seating.

Introduction

Many road safety and child health bodies/authorities recommend that for optimal protection, in addition to wearing an appropriate restraint, children 12 years old and under should travel in the rear seats of cars. This is because the risks of injury or death have been shown to be significantly lower for children in the rear seats of crash-involved vehicles than for those in the front [1]. Most recently, Durbin and colleagues [2], while noting that the effect of appropriate restraint was greater than that of seating position, found that rear seating reduced the risk of injury to children 12 years and under by 40%. Moreover, these researchers noted that appropriate restraint use interacted with seating position, with appropriately restrained children seated in the rear seat at the lowest risk of injury for each of the age groups they examined. Similarly, in Australia, in-depth analyses of crashes involving children have found that the risk of injury is significantly lower for children seated in the rear seat than for those in the front [3].

Despite this, crash data analysis and road side surveys indicate that high proportions of parents do not seat children in the rear seat in many countries. In the US, although analyses of data from the Fatal Analysis Reporting System (FARS) revealed a decline in the proportions of children seated in the front seats of crash-involved vehicles, there were still over 30% of these vehicles carrying children in the front seat by 1998 [4]. Observational studies report similar proportions of front seated children [5, 6]. For Australia, depending on the research method used, the reported proportion of front seated children varies: crash data analysis shows that 20-25% of crash involved children were seated in the front seat [3] while road-side observational surveys reveal that 50-60% of vehicles with child passengers carry a child in the front [7, 8], (though it should be noted that these observational studies had high proportions of school-related travel).

A number of studies have explored situational factors associated with children's seating positions in vehicles. The likelihood that children will occupy front seats appears to be reduced when there are other passengers, particularly adults, when all passengers are young children (6 years and under) and when the driver is using a restraint [5, 6]. Factors increasing the likelihood of children sitting in the front seat are travelling alone with the driver, older child age, being driven by someone aged over 25 years, non-morning trips and being driven for recreational purposes [9]. Though these studies have been useful in identifying and describing relevant factors there is little research examining parents' views about where their children sit or the psychosocial influences on their seating position choices. Such understanding may be important to intervention design as qualitative studies relating to the use of booster

seats in age-appropriate children, has revealed that parents' knowledge and attitudes are important influences on their safety behaviours in relation to their children [10]. Accordingly, the study reported below sought to identify psychosocial factors that influence parents' seating position choices for their children.

In Australia, existing legislation does not restrict children from occupying the front seats of vehicles, nor is the type of restraint mandated except for infants aged under 12 months, who must use an approved child restraint, properly fitted and adjusted [11]. These are rear-facing until the child reaches the size limit for the restraint after which a larger child restraint must be used until the child is at least 12 months old. Since all approved restraints for children of this age require a top tether, this is a de facto requirement for rear seating as the anchor points for these tethers are located in the rear seat. Thus it is perfectly legal, though not recommended, for a child as young as 12 months to sit in the front seat of a vehicle provided he or she wears an approved restraint. Given this legal position and the evidence that children are better protected when using restraints that are designed specifically for children [12, 13], an additional aim of the study was to examine when parents begin using adult seat belts with their children. The American Academy of Pediatricians advises that for proper belt fit, children should be at least 4 feet 9 inches (145cm) tall before using an adult belt without a booster seat [14]. According to growth charts for children [15], most children are around 9 years old before this occurs and thus should really continue using a booster seat until then. As the legislation for the restraint of children in Australia is currently under review, the study is also timely and may be useful in informing the review.

Method

Parent-drivers were recruited by personal approach in the open-air car parks of two urban shopping centres primarily retailing food and grocery items in Brisbane, Australia. Data gathering sessions were carried out between 10am and 5pm on Wednesdays, Fridays and Saturdays and between 2pm and 6pm on Thursdays (traditionally late night shopping in Brisbane suburbs). Inclusion criteria were: parent of child(ren) in the target age range (0-12 years old), who regularly drove their child(ren) in passenger vehicles with a rear seat. The shopping centres were selected according to 2001 census data [16] on the basis of median income for couple-families with children living in the surrounding suburbs (one in an upper SES area; and the other drawing on suburbs with upper, medium and lower SES). A total sample of 468 completed interviews was collected.

A short (under 10 minutes duration) intercept interview questionnaire was designed based on the findings from an earlier, related qualitative study reported elsewhere [17] that used focus groups to identify parents' concerns regarding their children's safety as passengers in cars. In keeping with the primary focus of this study, questions addressed parents' beliefs and behaviour in relation to where to sit their younger children in the car, the influences on their choices, and whether they had family 'rules' relating to where their children sat when travelling. In addition, parents were asked their beliefs about when children should start using adult seat as well as the age at which their own children had begun doing so.

The final questionnaire consisted of 28 mostly open-ended items. During the piloting of the questionnaire, interviewers were asked to record the key words and phrases in parents' responses to each question. Inspection of the responses to the pilot revealed that for most questions these fell into a limited number of common responses. For the final questionnaire, with the exception of the question on factors affecting parents' seating position choice, these common responses were pre-coded on the data sheet along with space for the interviewer to record the key words from responses that did not fit common responses. Parents were not shown the response sheets and were free to answer questions in whatever way they thought best. For the question relating to influences on seating position choices for children, a set of 8 factors or influences (drawing on the previous qualitative study and the pilot study) was shown to the parent (eg *"Having bigger brothers or sisters who are allowed to sit in the front seat"*). Parents were asked to rate how often each of these arose as an issue in relation to where their children sat (on a five point, Likert-type scale, 1 = *"never or rarely"*, 3 = *"about half the time"*, 5 = *"frequently-over half the time"*) and also how much each affected their final decision about where the child actually sat (also on a five-point, Likert-type scale, 1 = *"No influence: child sits in rear seat"*, 3 = *"Moderate influence: sometimes affects decision"*, 5 = *"Very influential: often or always affects decision"*).

Parents were asked whether they had rules about where children sat and if so, to describe the rule. Where parents indicated they did have a rule, interviewers were instructed to say "Most parents tell us that there are times when their children have ridden in the front seat even when they have a rule about sitting in the back. We're interested in when this happens (what circumstances)". Parents were then

asked to rate how often they had found it necessary to relax the rule on a 5 point Likert-like scale (1 = "*rarely (once or twice)*" to 5 = "*often (50% or more)*). They were also shown a list of potential reasons (based on focus group findings and the pilot study) and asked to indicate all of those which had applied to them at any time (see Table 4). Finally, demographic information was gathered.

Procedure

Trained interviewers were instructed to approach all shoppers who appeared to be between the ages of 18 and 60 as they approached their cars in each of the open-air car parks and invite their participation. After explaining the purpose of the study, screening for eligibility, and assuring confidentiality and anonymity, parents were asked to give verbal consent to the interview. Refusal among those who met the inclusion criteria was low.

Results

Descriptives

A total of 468 parents, 95 (21%) fathers, 348 (76%) mothers (for 15 parents data was not recorded) completed the interview. Size of family ranged from 1-9 children, with the modal family size being 2 children (see Table 1). Child ages ranged from newborn to adult (over 18 years).

Age of parents ranged from under 21 years to 59 years, though, as might be expected because of the child age of interest in this study, most parents were aged 30-49 years. A high proportion of parents indicated their occupation as "full time parents" (43.7%) with the next largest occupation being professional/managerial (20.2%).

Table 1: Demographic characteristics of sample

Number of children in family		**% of sample**	
	1 child	24	
	2 children	46	
	3 children	21	
	4 children or more	9	
Age of parent		**% of sample**	
	<21 years	0.7	
	21-29 years	13	
	30-39 years	58.5	
	40-49 years	25	
	50-59 years	1.3	
Household income*	**% of current sample (N=468)**		**% of Queensland population***
	Under $30,000pa	9	Under $33,748	8
	$31,000-60,000	32	$33,400-62,348	27
	$61,000-80,000	20	$62,400-88,348	24
	$81,000 or more	37	$88,400 or more	40
	Income not stated	2	Income not stated	2
Highest level of education	**% of current Sample (N=468)**		**% of Queensland population***
Some high school	7		46
Completed high school	21		11
Technical/trades/certificate	33		24
University degree	24		9
Postgraduate	15		2
Not stated	0.7		8

*Income figures are for couple families with children based on Australian Census 2006; Education figures are from Australian Census 2001 as data on this has not yet been released for 2006.

In terms of education, over 70% of the sample had at least some post-secondary education (including technical training or trades). However, residents of the upper SES location were significantly more likely to have post-secondary education (85%) than those from the lower SES location (64%), [χ^2(df 4) = 37.828, $p < .001$]. Both of these figures are considerably higher than the Australian national average of 49% [16] of adults with post-secondary education, but this discrepancy may reflect the fact that the Census sample includes older people who did not have the same educational opportunities that their children and grandchildren (our cohort) would have had.

Median family income was between $61,000 and $80,000, with a large proportion of this sample reporting family incomes of $81,000 or more (see Table 1), which is generally consistent with figures for the state from which they were drawn [18].

Parents' views on when children should begin to use adult belts or the front seat

Parents were asked to indicate the 'right time' for children to start using adult seat belts without boosters seats as well as when children should be permitted to sit in the front seat. Subsequent questions accessed parents' knowledge of the legal requirements in relation to permitting children to travel in the front seat, their views on the safest place for children to sit, and lastly, their 'biggest concern' about their children's safety in cars (see Table 2).

As can be seen in Table 2, most parents responded with a particular age the child should be in relation to the use of adult belts and the front seat. However, a large minority (between 20 and 30% in each case) responded with answers like "when the belt fits properly". In the event of this sort of response, interviewers were instructed to probe with 'how do tell when that is?' Only those descriptions that included a specific reference to the positioning of the shoulder portion of the belt such that it did not touch the child's neck were recorded as "when the belt fits".

More than a third of parents (39.2%) indicated that children should be using adult belts by age 6 (from Table 2), with nearly half (47.2%) indicating their own children had (or would, for those whose children who had not yet reached this age) do so by this age. Twenty percent of parents thought children should be 7-8 years old before using adult belts alone, with a slightly higher proportion (26.6%) saying their own children had been (or would be) this age. Just over one fifth of parents (22.6%) thought belt fit should determine the time for children to start using adult belts, but interestingly, this proportion dropped to 12.6% when parents considered when their own children had begun to do so. This might reflect that in practice parents are more guided by attainment of a right age than a right size when deciding on when to undertake this transition. Tests of significance on when parents had moved their children into an adult belt by demographic variables were non-significant with the exception of sex of parent [χ^2(df 4) = 11.82, $p = 0.019$]. Fathers were more likely than mothers to say their children had started using an adult belt when the belt fitted them (22.9% for fathers vs 12.9% for mothers).

In terms of the 'right time' for children to begin sitting in the front seat, most parents thought children should be older than was the case for using an adult belt: only 12% of the parents interviewed indicated that the 'right time' for children to sit in the front seat was 6 years old or younger, with the majority (53.5%) indicating at least 9 years old (see Table 2). Consistent with this, parents said their own children had been (or would be) older before being allowed to sit in the front seat, with over 20% indicating ages 7-8 and almost 60% ages 9 years and upwards. However, 15% of parents said that their own children had (or would) sit in the front by the age of 6 years, a larger proportion than had indicated this age in response to the 'right time' question. Only 18 parents (compared to 50 for the 'right time' question) indicated they would make this decision on the basis of belt fit.

Table 2: Parents views on when children should begin to use adult seatbelts and sit in the front seats of vehicles

	Parents' responses (%)						
Item	< 5 years old	5-6 years old	7-8 years old	9-10 years old	≥11 years old	"When the belt fits"	Height or weight
When is the right time for a child to start using an adult seat belt without a booster seat or cushion?	9	30.2	21.1	5.4	2.7	22.6	9
When did/will your child start using an adult belt without a booster seat or cushion?	11.8	36.6	26.6	6.3	6.5	12.9	4.2
When is the right time for a child to start sitting in the front seat of the car on a regular basis?	2.0	9.8	20.4	25.2	28.3	11	3.3
When did/will your child start sitting in the front seat of the car on a regular basis?	2.5	12.8	21.5	25.5	33	15.8	0.3

When asked about the legal age at which children are permitted to sit in the front seat of passenger vehicles, almost 4 in every 10 parents (37.6%) said they didn't know, while roughly even proportions of parents indicated ages 7-8, 9-10 and 11-12 years (16.7%, 13%, 14.3% respectively) (data not shown). No parents gave an age that was younger than 5 years, and a small proportion (7%) indicated ages over 12 years. The remaining parents indicated ages 5-6 years (4.8%), "when the belt fits properly" (3.9%) or gave a height/weight limit (2.8%).

In response to the question "where do you think is the safest place for children to sit in a car or passenger vehicle?" almost all the parents (97%) specified the rear seat of the car. Some were specific about exactly which rear seat (eg. "behind the driver"; "not in the middle"; "in the middle") but only 6 parents (1.3%) thought that the front seat was the safest. In contrast to the question on the legal requirements, only 6 parents (1.3%) said they didn't know where the safest place was and 2 parents said there was "no safe place".

The most common 'biggest concern' parents cited in relation to their children's safety in the car centred on making sure they were all restrained (35.2%) and for an additional 13%, that they did not manage to get out of those restraints. Parents were also concerned that restraints fitted children properly (5.9%) and that they could not open the door or put their hands or heads out of the window (2.8%). Almost one fifth of parents were most concerned about the risk presented by other drivers or having a crash (24.1%), while a small proportion (7.6%) were concerned about their attention being distracted from the driving task.

Parental perceptions and management of the risk of the front seat

Consistent with their responses about the rear seat as the safest place to sit in the car, the vast majority of parents (86.9%) reported that they knew the front seat was more risky. However, some parents added that they had not realised it was "by as much as that". Of those who had said they were aware of the extra risk, a large proportion (30.2%) indicated that it was "just common sense" to know this, while 15.9% could not remember where they had learned this, and the remainder reported a variety of other sources.

While most parents indicated that allowing a child to sit in the front seat was a concern for them (79.0%), some parents (21.0%) said they were not concerned. The most common reason given for this

lack of concern was related to perceptions of the risk of crashing, and was a variation of "I am a careful driver", "I won't have a crash" or "my car is safe" (27.4%). The next two most commonly cited reasons were related to perceptions of the effectiveness of restraints: "the airbags/seatbelts will protect my child" (16.4%) and "my child is big enough for the seatbelt" (16.4%). The remaining parents (35.6%) gave reasons that were more individual (eg. being able to monitor the child in the front, if there is a crash it won't matter where the child is sitting, only allow it on short trips, and so on)[*].

Influences on seating position choice. The remaining questions related to influences on seating position choice, family rules about seating position, and circumstances under which parents would relax these rules (see Table 3). For the purposes of the rest of the analyses, only those parents who had at least one child aged 4 years old or older and who also indicated that they were concerned about their children occupying the front seat were included (see footnote). In all, 265 parents met both criteria. The rationale for the child age criterion was that by 4 years old, most children have already grown out of the top-tethered child restraint and parents thus have a real choice about where to sit the child.

Table 3: Proportions of parents reporting that identified issues arose in relation to choice of children's seating position in passenger vehicles and proportion reporting their decisions affected (n = 265)

Issue *Question stems: How often does each of the following come up as an issue in relation to where your child(ren) sit(s) in the car? [Show list]* *How much does each influence your final decision about where your child(ren) sit(s)? [show response scale]*	**Proportion reporting that issue arises** (%)	**Proportion indicating decision is "sometimes" to "always" affected (of those reporting issue arises** (%)
Child having bigger brothers/sisters who are allowed to sit in the front seat?	43	44
Child insisting that they are grown up enough to sit in front?	48	27
Pressure due to your child's friends who are allowed sit in the front?	23	32
Pressure due to adult friends, relatives or other parents whose children are allowed to sit in the front?	14	14
Children fighting when they sit together in the rear seat?	68	28
Not enough room in the rear seat for all the restraints you need at the time?	22	61
Child putting up such a fight that it doesn't seem worth insisting that they sit in the rear?	21	54
Child misbehaving in the rear seat and distracting your driving	56	16

For many parents the issues we presented to them arose fairly frequently, some as often as on half of the trips with their children (see Table 3) . However, not all parents were influenced to allow children to sit in the front as a result. The most important influences on where children were allowed to

[*]As the pilot study had revealed that the subsequent questions about front seating did not make sense to parents who were not concerned about this issue, interviewers were instructed to ask for reasons and then proceed to the demographic questions for such parents.

sit appeared to be whether there was enough space in the rear seat and issues related to children's behaviour.

Of the 59 parents who indicated that lack of room for all of the restraints they needed arose as an issue when travelling with their children, the majority (61%) indicated that this reason "sometimes" to "always" affected their decision to sit a child in the front seat.

The issue of children fighting in the rear seat arose for more than two thirds of parents (68%). Moreover, child fights affected the decisions of 50 parents, the largest number overall. Similarly, more than 40% of parents reported that having older children who were allowed to sit in the front was an issue. Even though less than half of these parents (44%) said they were moderately or more influenced by this reason, overall, the decisions of 19% of parents, or one in every five, were affected.

Seating position rules. Most of the parents (81.0%) who were concerned about front seating reported that there was a rule in their family to manage it (n = 222), while 16.8% indicated that there was no specific rule. Almost three quarters (72.1%) of those families with a rule said it was that children always sat in the rear seat. A further 16.7% had designated seats for each person, and for 10 families the rule was that the oldest child was permitted to sit in the front seat. The remaining 18 families (8.1%) had a variety of other rules (for example, that the oldest two children took turns). The type of family rules variable was recoded into 3 categories of "no rule", "always sit in the rear", and "other". Chi-square analyses of this new variable by occupation, income and education revealed a significant difference for income only [χ^2(df 4) = 9.98, p = 0.041]. It appears that parents on the lowest incomes were more likely to specify the rule as "always sit in the rear" (80%) than either middle (53.9%) or higher (58.2%) income parents.

Of those parents with seating position rules, more than half (55.4%) reported that they had not had to relax their seating position rules as yet or had done so only "rarely (once or twice)." Most of the 146 parents who reported relaxing their rules indicated that this was "occasionally (20% of the time or less)", while 14 parents (9.3%) reported that it was more often.

Table 4: Parental reasons for relaxing seating position rules and proportions of those who relaxed their rules each reason

Question and preamble to parents who used a rule to restrict front seating: *"Most parents tell us that there are times when their children have ridden in the front even when they have a rule about sitting in the back. We're interested in when this happens (what circumstances) [show list].* *What were **all** of the reasons that applied at **any** time?"*	Proportion of parents reporting they allowed child to travel in front for specified reason* n (%)*
Too many children to fit all the restraints in rear	30 (20.5)
Too many children to fit all the children in the rear	46 (31.5)
Someone else was driving	9 (6)
Child management too hard on that occasion (tantrums etc.)	12 (8.2)
Special treat on that occasion	44 (30.1)
Just going for a short trip	79 (54.1)
Child illness (eg car sick) or injury	35 (24)
Children fighting too much	20 (13.7)
Other (please specify)	2 (1.4)

*of those parents (n=146) who had relaxed their rules

The relaxing rule variable was recoded so that parents either "never", "rarely", or "occasionally/often" relaxed the front seat rule. Chi-square analyses were conducted on this new relaxing rule variable by occupation, location, income, and education. Results of these analyses revealed that there were no significant differences, with the exception of location [χ^2(df 2) = 9.073, p = 0.011]. In this case those parents from a low SES area were more likely to have never relaxed their rule (39.6%) than parents from a high SES area (28.7%).

Those parents who had relaxed their seating rules (n = 146) were asked to indicate what the reasons had been and were shown a list derived from responses to the earlier qualitative study (see Table 4). The most frequently endorsed reason was because they were "just going for a short trip" (54.1%). However a large proportion of parents also indicated that there were occasions where they were carrying too many children for all to sit in the rear seat (31.5%), or they could not fit all of the restraints they needed into the rear seat (20.5%). Child illness was cited by 24.0% of parents and a similar proportion (30.1%) had allowed children to travel in the front because it was "a special treat". More than a quarter of these parents (28.8%) endorsed three or more reasons for allowing children to travel in the front seat.

Tests of significance conducted to see whether differences existed between families allowing front seat travel and those who didn't revealed no significant differences relating to sex of parent responding to the survey, income, education or location. As there were too few non-Caucasian parents included in the study, differences on the basis of ethnic origin could not be tested for.

Discussion

Parents' responses to questions about seat belt use are consistent with results found by others [19-22] that children are generally restrained in adult seat belts, without booster seats, at ages that are too early for adequate belt fit. In our sample, almost 40% of parents held the view that children should be in a seat belt by age 6, and almost half reported that their own children had been moved into a belt by this age. However, it does not appear that parents commence this practice at the youngest possible child age (12 months). This may be because parents have either initially purchased a restraint that suits the child from birth until approximately age 3½ years (for instance, a convertible child seat), or have bought one subsequent to the child outgrowing the infant restraint and continue to use this second restraint until the child grows out of it (also at approximately 3½ years). Even though one in five parents indicated that belt fit would determine when they moved their children into adult belts, a lower proportion reported that they actually had used this criterion in practice. Together, these results suggest that most parents may be using age as a guide to the time for a child's transition to a seat belt, but do not address the question until they believe the child has outgrown the toddler restraint.

In itself the practice of using age as a guide to when to use a seat belt need not be problematic and indeed the proposed changes to the legislation for the restraint of children in Australia are age based [23]. However, under these circumstances, parents' perceptions of which ages to use as transition points are critical. Our results suggest that a large proportion of parents use an inappropriately young age for this transition: ages 5-8 years. As has been highlighted by previous research, most children do not reach an appropriate height for an adult belt (that is, a standing height of 145cm or 4ft 9in) until they are at least 9 years old [24] and some may be as old as 11 years before being tall enough [15]. Thus for best protection of children, adequate attention to informing parents of appropriate transition ages and measures to influence their current perceptions about this are needed.

The fact that parents generally reported older ages for children to sit in the front seat is encouraging, as is their use of rules that children sit in the rear seat. However more than a third reported they had allowed their own children to occupy front seats by age 8 years, rising to almost half by the age of 10 years. Again, this practice is likely to compromise the safety of smaller, younger children by exposing them to poor belt fit as well as the extra risk associated with front seating.

Space considerations, children fighting and having an older child who has started sitting in the front seat emerged as the most influential reasons for parents to allow children to sit in the front seat. This suggests that parenting practices may be important to seating position choice. Surprisingly, children's behaviour distracting the driver was not seen as particularly influential. It may be that parents are generally more concerned about children harming one another when they are fighting than they are about other distracting behaviours. Alternatively, it may be a matter of degree: parents may find the noise and movement that goes with fighting more distracting than other potentially distracting behaviours and are thus more influenced to do something about it.

Limitations

This study used a convenience sample of urban parent-drivers and as such a limitation of the study is that it may not be representative, particularly of parents in non-urban settings. Demographic characteristics also suggest that the sample parents may be somewhat better educated than the general Australian public, possibly resulting in a greater tendency to be aware of, and compliant with, recommended safety practices. However, there were no statistically significant differences between parents' responses on the basis of education, suggesting that this is not an important factor in relation to parents' choices about children's seating positions, at least within the range of education in this sample.

Although the majority of this sample was female, we would argue that currently it is mothers who take primary responsibility for children's transport, though this may be changing both in Australia and elsewhere.

Another limitation lies in the self-report nature of the data and the potential for parents to give socially desirable responses. We attempted to control for this to some extent through the open-ended nature of most of the questions as well as through normalising responses that might otherwise seem less desirable (eg by telling participants what "other parents have told us"). However it is still possible that parents were providing responses that were more conscientious than their true beliefs or behaviour.

Conclusions

Overall, parents in this study were far from casual about their children's safety: most were concerned about front seating and had safety rules to manage this and a large proportion were concerned about how their children were restrained. However, it appears that though the overwhelming majority of parents are aware that front seating carries additional risk, they may be ill informed as to the magnitude of this risk, may be minimising the danger, or may be trusting that belts and vehicle safety features will provide all the protection necessary.

Targeting these perceptions of risk appears to offer a way to capitalise on parents' apparent receptivity to doing the best for their children. As many parents already have rules, interventions that encourage parents to resist relaxing them as well as to maintain or tighten these to apply until children have reached older ages (for instance, at least age 12 years) could be effective. Such interventions could target parents of children who are about to start school as these children have apparently not yet reached the age at which most parents believed front seating should commence.

Moreover, as called for by others [19, 25] parental focus should be directed to how well restraints fit, rather than just ensuring children use them. In this sense, well designed legislation could be critical. It appears that Australian legislation, which has not required the use of child specific restraints once the child reaches 12 months of age, nevertheless has had the effect of encouraging parents to maintain their children in child restraints until older than this because most children require a larger restraint before they reach the end of their first year. It is likely that parents then keep using these larger restraints until the child is deemed to have outgrown it. Legislation which mandates the use of dedicated restraints beyond this toddler age (which is currently in process in Australia) may similarly encourage parents to purchase and use booster seats. An added benefit may be that the promotional and educational campaigns that generally precede such legislative changes could be used to alert parents to issues of belt fit and seating position. Finally, it appears that parents might also find strategies to manage children's behaviour, particularly fighting while travelling, useful.

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